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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,902	11/24/2003	Alan L. Billings	930034-2041	5301

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EXAMINER	
CHIMIAK, EMILY ANN	
ART UNIT	**PAPER NUMBER**
1791	

MAIL DATE	DELIVERY MODE
01/07/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/720,902	BILLINGS ET AL.	
	Examiner	Art Unit	
	Emily Chimiak	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 16-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 16-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

ETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/22/2007 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 8 and 16-23 stand rejected under 35 U.S.C. 102(b) as being anticipated by Wicker (US 3368933).

Wicker teaches a belt 137, capable of being a single facer corrugator belt, in combination with a corrugated paper board machine (column 1, lines 8-10). The belt comprises:

- base structure 135 having an inside and a paper board contact surface and being formed by machine direction yarns and cross-machine direction yarns (Figure 16; column 10, lines 24-30)

- polymeric resin coating 136 (***sheet 136 equated to Applicant's "coating" – see dictionary definition of coating and list of synonyms attached to present office action***) applied on the paper board contact surface of the base structure (Figure 16; column 10, lines 24-30), and
- plurality of grooves 84a formed in the polymeric resin sheet/coating 136 (Figure 6; column 8, lines 39-61; column 10, lines 68-74).

As for the plurality of grooves aiding in improved paper board release and increased rate of board moisture removal, this is a function of the grooves and not a structural limitation. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function (MPEP 2114). Furthermore, the material worked upon (paper board) by the apparatus and the manner by which the apparatus cooperates with the material worked upon (aiding in improved board release and increased rate of board moisture removal) does not further limit the scope of an apparatus claim (MPEP 2115). However, the grooves of Wicker would be capable of aiding in improved board release and increased rate of board moisture removal. And although it is irrelevant, the Examiner would like to point out that Wicker expressly teaches the grooves aiding in improved board release (column 8, lines 47-49 and 53-61).

It is noted that the resin coating forms a distinct layer on outside surface of said base structure.

As to the claim limitation "a liquid polymeric resin coating is applied and cured," (claim 1 line 6), this is product by process language and does not have patentable weight provided that the product of the reference is the same as that of applicant. In any event, it is noted that in one

embodiment, the outside surface of liner 21 and a first Mylar sheet layer (outside surface of the base structure) is coated with Unithane Resin D-407-JL (col.5 line 75-col. 6 line 5). It is noted that this resin is an aqueous (liquid) curable resin. Col 3 line 55- col. 4 line 2 and col. 4 lines 11-15 and 47-52 and 70-75 in US 3377950 is relied on to show that Unithane Resin D-407-JL is a curable emulsion, i.e. applied as a liquid.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-6, 8 and 16-23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Welch et al. (US 5857605, previously cited) in view Wicker.

Welch teaches a belt 46, capable of being a single facer corrugator belt, in combination with a corrugated paper board machine comprising:

- base structure formed by fabric plies 119-121 having an inside and a paper board contact surface (Figure 11; column 5, lines 35-40)
- polymeric resin coating 123 (***cover 123 equated to Applicant's "coating" – see dictionary definition of coating and list of synonyms attached to present office action***) applied on the paper board contact surface of the base structure (Figure 11; column 5, lines 40-44), and
- plurality of grooves 105 formed in the polymeric resin cover 123 (Figure 11; column 4, lines 20-23).

As for the plurality of grooves aiding in improved board release and increased rate of board moisture removal, this is a function of the grooves and not a structural limitation. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function (MPEP 2114). Furthermore, the material worked upon (board) by the apparatus and the manner by which the apparatus cooperates with the material worked upon (aiding in improved board release and increased rate of board moisture removal) does not further limit the scope of an apparatus claim (MPEP 2115). However, the grooves of Welch would be capable of aiding in improved board release and increased rate of board moisture removal.

It is unclear as to whether the reference teaches the fabric plies of the base structure having machine and cross machine direction yarns. One reading Welch would have readily appreciated that the reference is not concerned with a particular type of fabric (i.e. non-woven, woven, etc.) for the base structure. Therefore, selection of a particular type of fabric would have been within purview of one having ordinary skill in the art. However, it would have been obvious to use a woven fabric, and hence a fabric that inherently has machine and cross machine direction yarns, for the base structure because such is well known and conventional in the art, as taught by Wicker (see above for complete discussion).

Although in the embodiment relied on 123 is rubber, one reading Welch as a whole would appreciate that the disclosure does not limit the reference to a rubber lower ply because Welch states "This composite underside 116 may be created in a number of different manners" (col. 5 lines 35-40).

However, it is unclear whether the reference teaches layer 123 as a curable liquid coating.

Wicker discloses a particularly effective coating comprising Mylar and curable liquid coating wherein the amount of Mylar and curable liquid layers depends on the desired thickness of the product (col. 5 lines 30-40 and 75-col. 6 line 5).

It would have been obvious to one of ordinary skill in the art at the time of invention to fabricate layer 123 of Welch using curable liquid adhesive and Mylar layers as taught by Wicker in order to make a crystalline outer layer with a good resistance to heat degradation, bonded together in enough layers to form a final product with the required thickness.

6. Claims 1-6, 8 and 16-23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Billings et al. (US 6470944, previously cited) in view of Hansen (US 2002/0102894, previously cited) and further in view of McGahern et al. (US 6428874, previously cited).

With respect to claim 1, Billings teaches a single facer corrugator belt 40 in combination with a corrugated paper board machine comprising:

- base structure 52 having an inside and a paper board contact surface and being formed by machine direction yarns 56 and cross-machine direction yarns 54, and
- polymeric resin coating 66 applied on the paper board contact surface of the base structure (Figure 2; abstract; column 3, lines 10-18; column 4, lines 43-48; in fact, Billings teaches coating **and** impregnating the base structure with the resin so that **complete impregnation of the base structure** takes place because complete impregnation of the base structure, **in addition** to forming a distinct resin layer on the outside surface of the base structure, improves the integrity and durability of the belt).

It is unclear as to whether Billings teachings a plurality of grooves formed in the polymeric resin coating.

It is known in the art to make a belt, which can be used as a **long nip press belt in a paper machine or a corrugator belt in a corrugator machine**, having a base structure formed by yarns where grooves are provided in the yarns for temporarily storing water that is removed from the material as it is conveyed on the base structure, as taught by Hansen (sections [0015, 0021, 0052]). But unlike Billings, Hansen does not teach coating/impregnating the base structure with a resin.

However, it is known in the art to make a **long nip press belt for a paper machine** having a base structure formed by yarns and a polymeric resin layer that coats/impregnates the base structure where a plurality of grooves are formed in the resin for temporarily storing water that is removed from the material as it is conveyed on the base structure, as taught by McGahern (Figure 3; abstract; column 2, lines 61-62; column 4, lines 45-47; column 5, lines 20-22).

Therefore, it would have been obvious to one of ordinary skill in the art to make the corrugator belt of Billings capable of temporarily storing water that is removed from the material as it is conveyed on the base structure because such is known in the corrugator belt art, as taught by Hansen; however, the manner by which Hansen achieves this capability (grooves in yarns) would not be suited to the base structure of Billings whose base structure is completely coated/impregnated with resin. Therefore, it would have been obvious to one having ordinary skill in the art to further look to the teachings of McGahern, who achieves the same capability in a base structure that is completely coated/impregnated with resin by forming grooves in the resin, for motivation to provide grooves in the resin layer of Billings, especially since Hansen teaches it being known to use the same base structure as a long nip press belt in a paper machine or as a corrugator belt in a corrugator machine.

As for the plurality of grooves aiding in improved board release and increased rate of board moisture removal, this is a function of the grooves and not a structural limitation. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function (MPEP 2114). Furthermore, the material worked upon (board) by the apparatus and the manner by which the apparatus cooperates with the material worked upon (aiding in improved board release and increased rate of board moisture removal) does not further limit the scope of an apparatus claim (MPEP 2115). However, the grooves of Billings, as modified, would be capable of aiding in improved board release and increased rate of board moisture removal.

Double Patenting

7. The obviousness-type double patenting rejection of the present claims, as set forth in all previous actions, stands.

Response to Arguments

8. Applicant's arguments filed 10/22/2007 have been fully considered but they are not persuasive.

As to the argument regarding Wicker, the reference teaches a distinct layer of curable liquid resin applied to the outer surface of the base structure (see the 102 rejection above).

As to the argument regarding Welch, the reference is not used to teach a distinct layer of curable resin.

As to the argument regarding Billings, impregnating the base includes forming a distinct layer because the impregnation step includes a coating step (see col. 4 lines 42-45).

As to McGahern, this reference is not relied on to disclose a polymeric resin coating.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Chimiak whose telephone number is (571)272-6486. The examiner can normally be reached on Monday-Friday 8:30-5:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)272-6486. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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